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ABSTRACT

Prompted by pupil dissatisfaction and indifference, an experimental scheme of modified working routines involving approximately 500 pupils and 40 teachers was conducted in senior level classes in the Municipality of Ockero between 1976 and 1981. The purpose of the project was to transform the everyday life of school and to devise methods for experiential learning. The government sanctioned two departures from the regular order of things: free deployment of resources and the observance of an outline time schedule. The outline time schedule meant a minimum compulsory number of periods per subject. Generally, evaluation findings indicated that school work can be extensively changed without excessive alterations to existing organizational structures. More specifically, pupils with high marks were so preoccupied with the demands of upper secondary school that they did not dare devote time to projects according to interest. Low achievers tended more often to opt for project work, including leisure activites which might give them a feeling of success. Follow-up findings show that nearly all of the low achievers had jobs, even though unemployment is particularly high in their age group. Three-fifths of students participating in follow-up interviews had a positive view of their free choice experience, one-fifth were doubtful, and one-fifth were negative. (RH)

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# SCHOOL RESEARCH Newsletter

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Discovery learning
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CURRENT FOLLOW-UP OF PROJECT

TITLE OF PROJEKT: DISCOVERY LEARNING AND COGNITIVE DEVELOPMENT - THE UKU PROJEKT

An experimental scheme of modified working methods and extended freedom of choice partly affecting the Compulsory School Curriculum (Lgr 80) was conducted in senior level classes in the Municipality of Öckerö between 1976 and 1981. The experiment was based on an outline time schedule and free utilisation of resources. How have the extreme groups, i.e. low and high achievers, fared since they emerged from senior level? Have either or both groups been favoured or disfavoured by the conditions of the experiment? What preparedness and opportunities have these youngsters had of coping with subsequent studies, working life and everyday life? What difficulties have they run into? What are their attitudes to education and study? How have their self-images and their attitudes to the future been affected?

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## FOCUS AND ACTIVITIES OF THE PROJECT

### Some formal particulars

The project, which was conducted between 1976 and 1981, and its current follow-up have been funded by the NBE. The follow-up began in the 1983-84 fiscal year and is still in progress. The collection of data, from interviews with young persons from the class which left the senior level of Öckerö at the end of the spring term 1980, has just been completed and the remaining time will be spent on processing, analysis and reporting. The time input for the follow-up has been the equivalent of a half-time appointment for the past two fiscal years.

### Background

An experimental scheme of modified working routines partly affecting the Compulsory School Curriculum (Lgr 80) was conducted in senior level classes in the Municipality of Öckerö between 1976 and 1981. During the experiment, these classes had upwards of 500 pupils and about 40 teachers. The experiment was prompted by the rather unsatisfactory conditions prevailing at that time. There were obvious contradictions between the independence to which teenagers aspire during puberty and palpable dependence on teachers, predetermined timetables and constraints of various kinds. The pupil role did not strengthen or develop self-identity. The result was dissatisfaction and indifference to what went on in school. The pupils did not feel responsible; responsibility was vested in the teachers. Teachers and school management were amenable to change in keeping with the curricular aims of active acquisition of knowledge in an atmosphere of shared responsibility and involvement.

In the course of the project we took part in and evaluated the work of change, a form of change-oriented research. The purpose of the project was, in collaboration with teachers and pupils and, to some extent, parents, to transform the everyday life of school and to devise methods for the active acquisition of knowledge, i.e. experiential learning.

The Government sanctioned two departures from the regular order of things, viz free deployment of resources and the observance of an outline time schedule. The outline time schedule meant a minimum compulsory number of periods per subject, known as fixed periods. Those periods were completed at class level and occurred mainly during the mornings. Thus every subject had a slightly smaller number of periods than was specified in the curriculum and was therefore able to contribute one or more periods to a "kitty" of what were known as free periods. These were chosen freely by the pupils, who were able to choose between devoting them to the further pursuit of various school subjects or to work on more practical projects, mostly involving field trips and contacts with the outside community. During free periods, the pupils were to have a great deal to say concerning the content of activities and the working methods used. Groups were set up consisting of pupils from different classes and grades.

A host of data were collected during the actual experiment. Most of the processing and analysis then referred to the pupil material as a whole. Consequently a great deal more can be extracted concerning various special groups than we were able to do while the project was actually in progress. During the closing years of the project, however, we interviewed low and high achievers in order to ascertain what freedom of choice and co-determination had meant for their schooling.

During the follow-up last school year, I augmented previous data by interviewing low achievers from the class which had left senior level at the end of the spring term 1980, i.e. 3-4 years earlier. During the current school year I am engaged on a similar follow-up of high achievers who left senior level the same year.

Aims and theoretical assumptions

The project acronym stands (in Swedish) for Discovery Learning and Cognitive Development. Cognitive development represents a broader view of ability than is expressed in the marks awarded to pupils at school. It includes changes in people's attitudes to each other and changes in

their views concerning the nature of genuine and trivial knowledge. Changes of this kind influence the whole of personal development.

Discovery learning shows that it is the pupil who learns. Learning something means processing material so actively as to make it one's own. Learning of this kind presupposes a content which is found relevant and meaningful. An individual person's development, of course, is determined by the learning experiences which he finds meaningful.

One important aim has been to develop in the pupils a shared responsibility for their own development and education, to give them a say in the use made of their time at school. One way of developing this responsibility has been to give them a free choice of content and working methods for certain periods, known as free periods. Dewey, whose theories have done a great deal to influence the experiment, is distinguished by his "theory of consequences", which says that one must always pause to reflect and ask oneself: "Where is this leading?", so as to assume genuine responsibility for what one proposes doing. One can only learn to predict consequences if one has alternatives to choose from.

Another purpose of the experiment was to eliminate antipathies between teachers and pupils, to create a favourable social environment and in this way to liberate force and energy for the active acquisition of knowledge. Dewey argues that teaching must not only be enriched by teacher and textbook: the pupils too must be allowed to contribute to their experiences. The important thing is that freedom of choice enhances motivation because the pupils have then had an opportunity of choosing things which they find relevant and meaningful, which is one of the preconditions of experiential learning. This in turn leads to cognitive development. Interaction between learning and development takes place when there is an exploratory, actively investigative attitude to subject content, as with experimental working methods. Experimental working methods consist in the discovery and investigation of the world around us; Piaget's theories underlie this approach. He often speaks of the discovering and the inquiring as two power re-

sources which should be made use of. Dewey asserts much the same principle and takes the view that pupils should be given an opportunity of testing hypotheses, instead of just building their images on indirect experiences conveyed through symbols. The pupils should then be enabled to reflect critically on what they have arrived at. The search for knowledge led to common action and exploration of the community outside school. Dewey says that schools are isolated from life. Knowledge must be connected with everyday practical life, but instead it has become almost axiomatic to pupils that school knowledge is irrelevant to the life they lead.

The experimental working method and contact with the community outside school have been catered for above all in projects chosen according to interest. In those projects, an attempt was made to combine theory and practice and pupils of differing ability were enabled to work together and learn from each other. It has been clearly realised in Öckerö that the traditionally one-sided theoretical emphasis of schooling can make school seem pointless to pupils with a more practical bent and can inspire a feeling of alienation from practical work on the part of theoretically more talented pupils.

Evaluation results

The evaluation has shown that school work can be extensively changed in favour of active acquisition of knowledge and pupil participation in the planning and conduct of teaching without excessive alterations being made to organisation and external frames.

Implementation was not without its problems and obstacles, and it was not an exclusively positive process. This is reflected by our reports. But satisfaction improved when the pupils were allowed to choose the content of free periods and to work differently together with pupils from other classes and grades. Teacher-pupil relations also improved a great deal when the two sides got to know each other in project groups and when the pupils felt that they were not being forced into everything. With very few exceptions, the pupils gave serious consideration to the consequences of their choices and assumed responsibility in a

manner which rarely occurred before. Some of the project work techniques, above all the method of establishing contact with and investigating the immediate community, have been utilised in ordinary classroom teaching during fixed periods.

Pupils with high marks were governed more than others by forward-looking, utilitarian considerations in their choices, and they also had an opportunity of pursuing pre-upper secondary school studies in certain subjects. They appreciated being able to work at their own speed during free periods. This gave them more chance of improving their marks, which they thought was more important than learning about planning and co-operation. They were so preoccupied with the demands of upper secondary school that they did not dare to devote time to projects according to interest. They did not feel that project results could improve their marks to the same extent as more advanced subject studies. They were afraid that they might not have learned the same things as other senior level pupils. There seemed to be a risk of their looking down on and feeling alien to practical work.

Low achievers tended more often to opt for project work, and this often gave them an opportunity of asserting themselves and feeling that they were capable of something. Several of them also chose things which might best be characterised as leisure activities. In my opinion, it was not unimportant that they gained an insight into matters which could in future make their leisure rewarding. Leisure activities in school have another important function as well. They can give the pupils a feeling of success. Many of the low achievers have little opportunity of such experience in the ordinary school situation. Consequently the low achievers in Öckerö did not take such a negative view of themselves as when they were constantly reminded of their inferiority in class.

For almost half of the low achievers, however, the system seemed to involve certain hazards - the risk of acquiring insufficient basic skills, of receiving insufficient help or of not daring to enter groups where they did not know the other participants or the teachers. These pupils could have done with more support and counselling, to save them

from assuming sole responsibility for the consequences of an unsuccessful choice.

But more than half of the low achievers seemed quite definitely to have benefited from the system; above all they acquired very good self-confidence, because they had an opportunity of choosing things which they were good at. Most of the low achievers based their free choices on the principle of opting for things they were good at. Once they had improved their self-confidence, they also ventured to choose subjects which came less easily.

Results of last year's follow-up of low achievers

As regards an important thing like hunting jobs, they have, so to speak, been able to sell themselves verbally. In practically every case they give the impression of being outgoing and natural and are distinguished by their capacity for initiative. Most of them have spontaneously got in touch with companies. They find it easier to make contact with people, and this is the main thing they feel they learned in connection with certain projects and during their work experience. One thing which they do not seem aware of having practised, but about which there is no mistake, is fitting in with groups where many or nearly all of the participants are unknown to them. They received this training during free periods. Some of them found it unpleasant during their senior level years, but there can be no doubt that the exercise contributed to the boldness they showed when starting at a new place of work. They have learned to enter unknown groups, something which most youngsters do not learn until they start work. By tradition, senior level pupils are enclosed in a class community. Project work has also taught them to co-operate with others, which has been useful to them in working life.

Nearly all of them had jobs, even though unemployment is particularly high in their age group. With few exceptions they were satisfied with their situation and grateful for being in work. Most of all they appreciated jobs where they were learning new things all the time. When interviewed they discussed their own future very seriously. My

conclusion is that they have grown accustomed to reflecting on the potential consequences of their decisions and also to planning.

How well did these youngsters feel that senior level had prepared them for life after compulsory school? For the most part they talked about preparation for working life. The pupils who felt best prepared were those who had already made up their minds during senior level what they wanted to do and had deliberately chosen activities for their free periods with a view to their future employment. It transpired that they felt more emphasis should have been put on teaching them to finish things at school. At work you have to finish what you have started. Since weak pupils are often slow and prefer the line of least resistance, they are very often allowed to hand in half-finished work and go on to something new. This, however, did not apply to project work; the pupils emphasised that this was more like ordinary work. The greater the effort made to apply the principle that everything done was to be applied to a particular purpose, the more meaningful school seems to have appeared to these pupils.

Those who had gone on to vocational two-year lines of upper secondary school also felt that they had been relatively well prepared.

Looking back, three-fifths of the interviewees took a positive view of free choice, one-fifth were doubtful and one-fifth were negative. The negative interviewees felt that they had been insufficiently mature for this kind of responsibility. More counselling would have meant a great deal to them. In some cases the free choice had had an unconscious but desirable effect. When they discovered that the teachers were also exploring their way ahead and learning new things during the projects, they began to understand that knowledge was something one had to be looking for all the time as life proceeded. New things were always cropping up, and one never stopped learning. To many people this is self-evident, but the youngsters described it as a fascinating discovery. The interviews made it clear that teachers are very important persons to their pupils. Our youngsters emphasised that teachers must care about their pupils and get to know them properly. To some of them it had been rather a shock coming to a big senior level school and

becoming just one of a crowd, somebody who was not recognised, somebody who was not noticed for any reason and somebody whom the teachers did not get to know. If as low achievers they could not make themselves known for any positive reason, there remained the possibility of making themselves known for negative reasons, of attracting attention through bad behaviour or playing truant to see if anybody noticed their absence or presence in school. The majority, however, managed to attract positive attention by opting for a free activity which they were good at. In several cases I noticed that the supervisor, foreman or such-like had to take over certain elements of the teacher's role. The youngsters were anxious to receive attention from them, to receive credit for doing a good job. In this and other ways they seemed to be in great need of adult contacts; some of them said this in so many words, while others revealed it indirectly through their appreciation of the interview.

The youngsters do not seem to have suffered any permanent damage through their failures during the senior level grades. If anything I sensed that they were proud of nonetheless having managed. Most of them, undoubtedly, made decisions of relevance to their future lives when during their senior level years they selected activities corresponding to their interests and strong points. This gave them a better chance than they would otherwise have had of experiencing success, thus strengthening their self-confidence. Those who said that school had had a negative influence on their self-esteem blamed the daily experience of insufficiency resulting from teachers obviously feeling that they were such hopeless cases that they were not even worth the trouble of nagging. The high self-confidence of this group, which really comprises pupils at risk in this and many other respects, is to my mind the most beneficial legacy of senior level, and doubtless partly a result of the de-restricted system. In the long run, belief in one's own ability is more important than many other things. The majority felt that the main ingredient of self-confidence was the feeling of being needed somewhere in some respect. In the event they experienced this feeling mainly at work. Most of them seemed to believe in their own personal future and in their own ability to make decisions and size up their opportunities. Those who did not have enough responsibility

at work were set on obtaining it after a time. As a rule they wanted to work more freely, to have jobs where they were allowed to think for themselves. One or two preferred not having to decide things for themselves, but the majority considered this to be a definite advantage: they wanted to have responsibilities, to use their initiative and to come up with ideas.

My abiding impression of interviews with these young persons is a positive one, the most positive thing of all being that they regard themselves, not as passive spectators of life but, as it would seem, have acquired and retained the habit of considering themselves responsible.

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(In Swedish)

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(In Swedish)

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Sandgren, B., Andersson, B. & Lindahl, H. Rapport från en ö 6. Annorlunda" vardag - Elevernas arbetssituation. (Report from an island 6. An ordinary day with a difference - The pupils' working situation.) Pedagogiska institutionen, Göteborgs universitet. May 1978.
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Helgesson, G., Nilsson, L., Rooseniit, C. & Westin, E. Rapport från en ö 7. Lär dom sej nått? - Lärarnas rapport. (Report from an island 7. Are they learning anything? - Teachers' report.) Pedagogiska institutionen, Göteborgs universitet. August 1977.
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Rapp, N-J. Rapport från en ö 8. Rektor Rapps rapport. (Report from an island 8. Headmaster Rapp's report.) Pedagogiska institutionen, Göteborgs universitet. August 1977.
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Lander, R. Rapport från en ö 15. "Valfrihet och praktiskt arbete på högstadiet: Effekter efter ett år på gymnasiet?" (Report from an island 15. Summary of the report "Freedom of choice and practical work at senior level: Effects after one year of upper secondary school?) Pedagogiska institutionen, Göteborgs universitet. 1981:13.
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Andersson, B. Rapport från en ö 17. Vad hände sedan? En uppföljning av elever med låga betyg som lämnade Öckerö högstadium våren 1980. (Report from an island 17. What happened then? A follow-up of pupils with poor marks leaving the senior level of Öckerö schools in spring 1980.) Pedagogiska institutionen, Göteborgs universitet. July 1984.
(In Swedish)

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